LIKELIHOOD OF SWITCHING LOCAL TELEPHONE SERVICE PROVIDERS

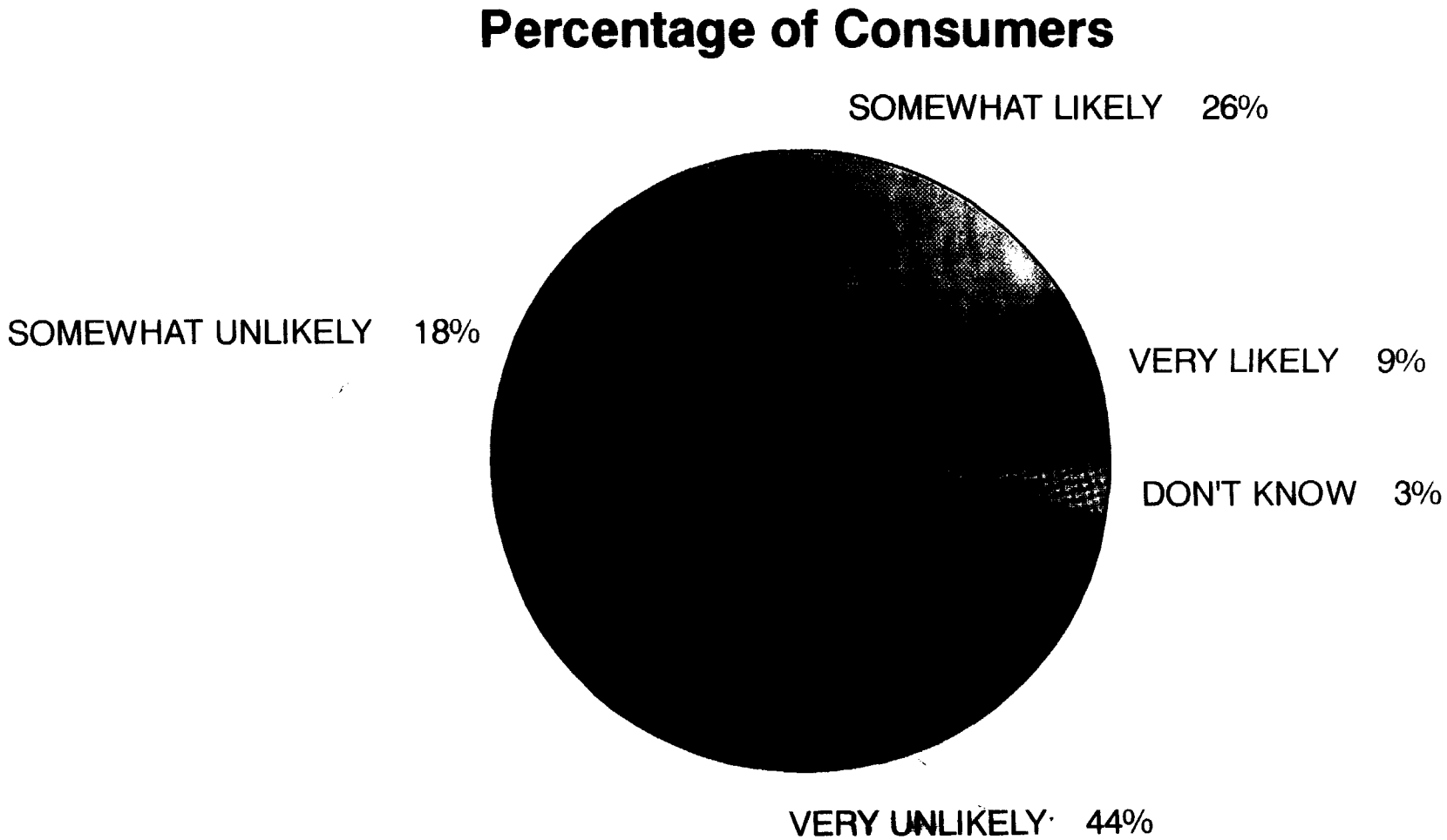

FIGURE 7

IMPORTANCE OF RETAINING CURRENT TELEPHONE NUMBER WHEN SWITCHING PROVIDERS

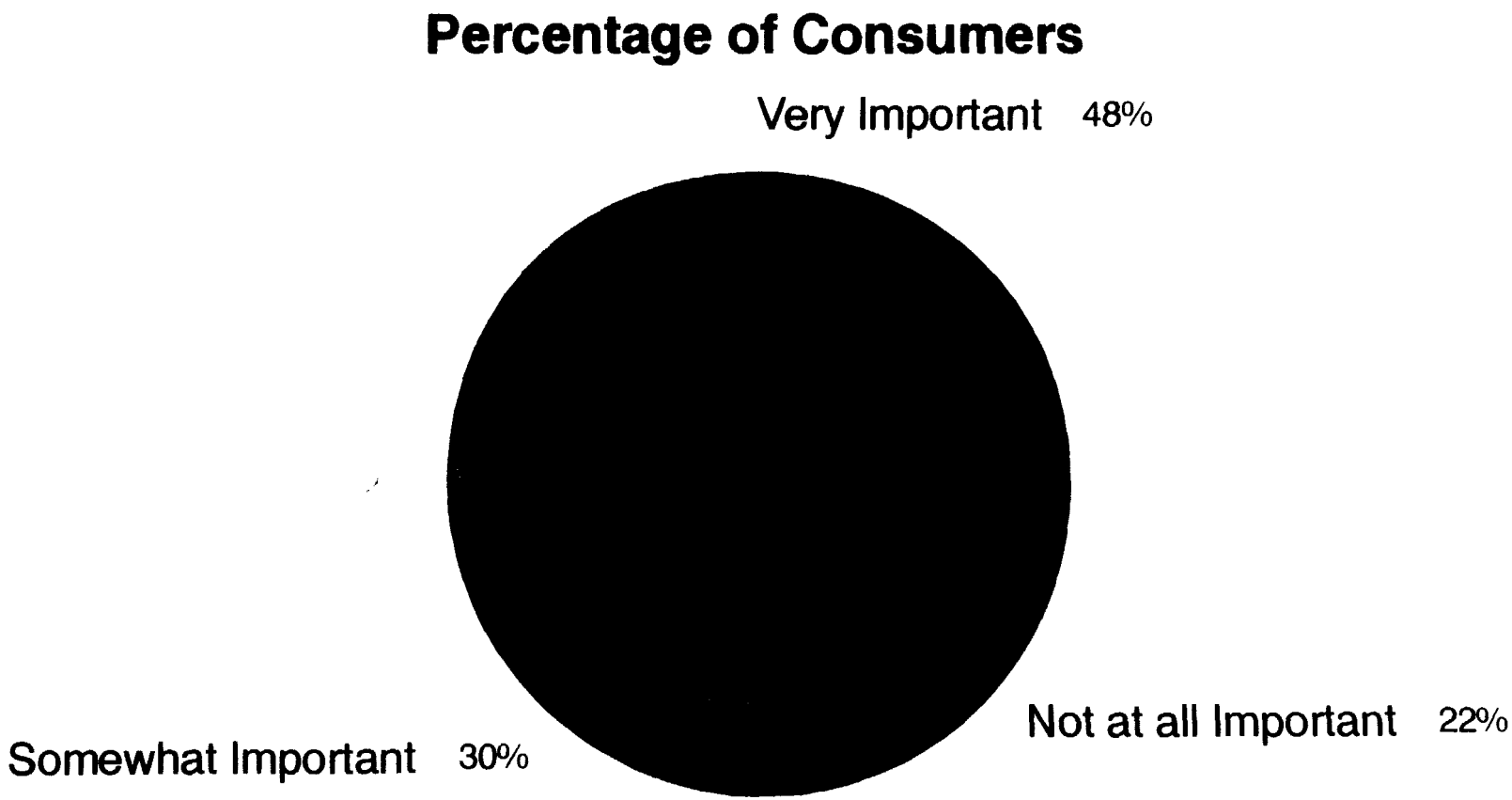

FIGURE 8

LIKELIHOOD OF SWITCHING LOCAL TELEPHONE SERVICE PROVIDERS WITH NUMBER CHANGE

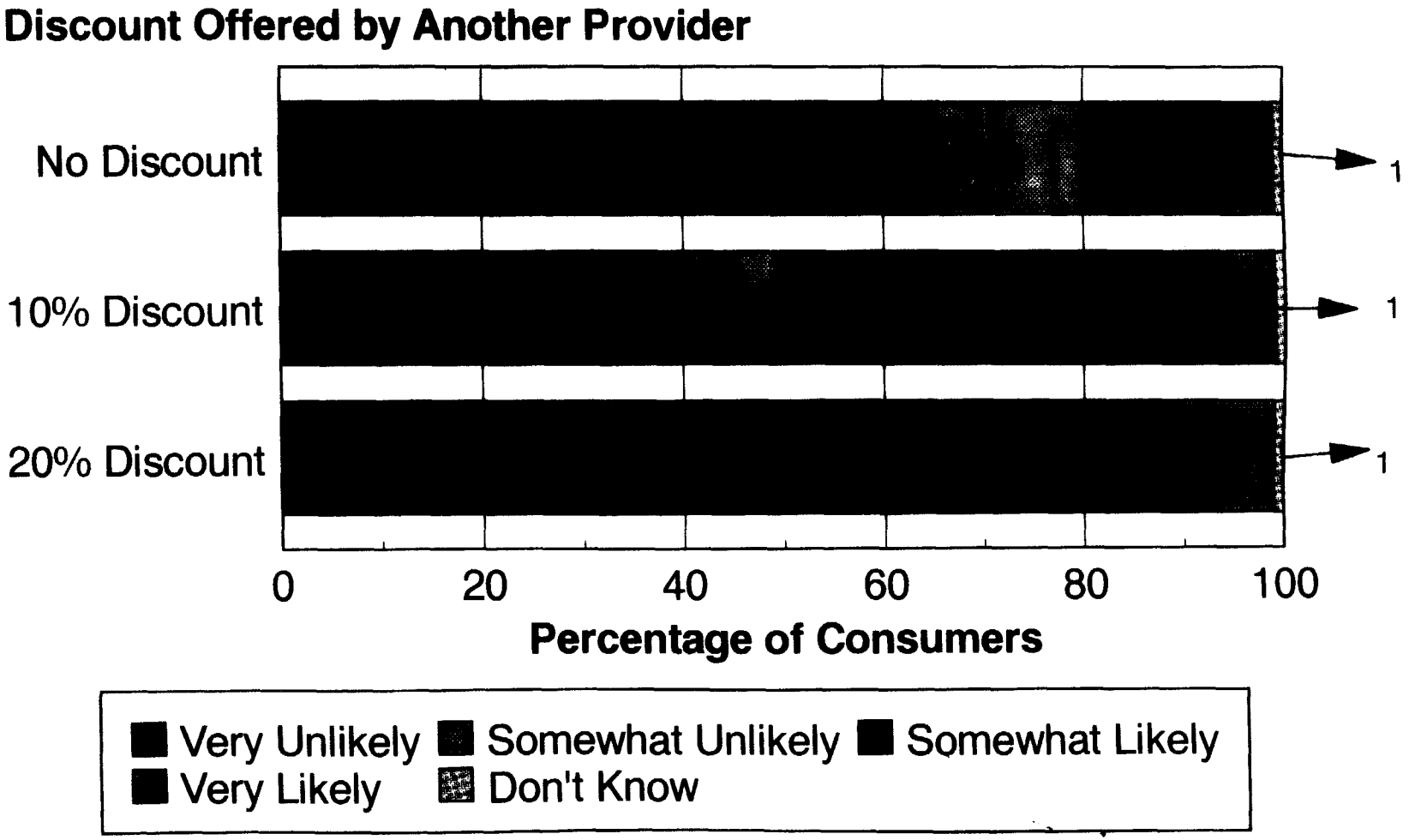

FIGURE 9

CONSUMER TELEPHONE NUMBER LISTING

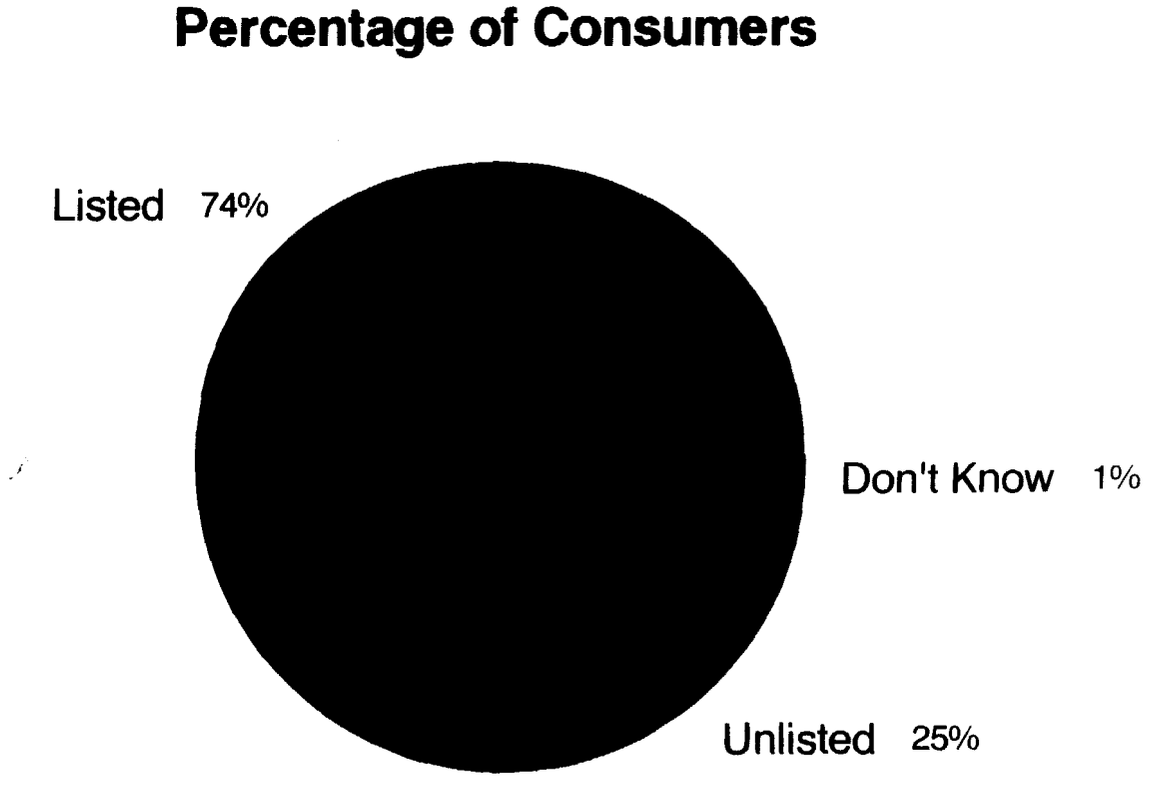

FIGURE 10

IMPORTANCE OF RETAINING LOCAL TELEPHONE LISTING WHEN SWITCHING PROVIDERS

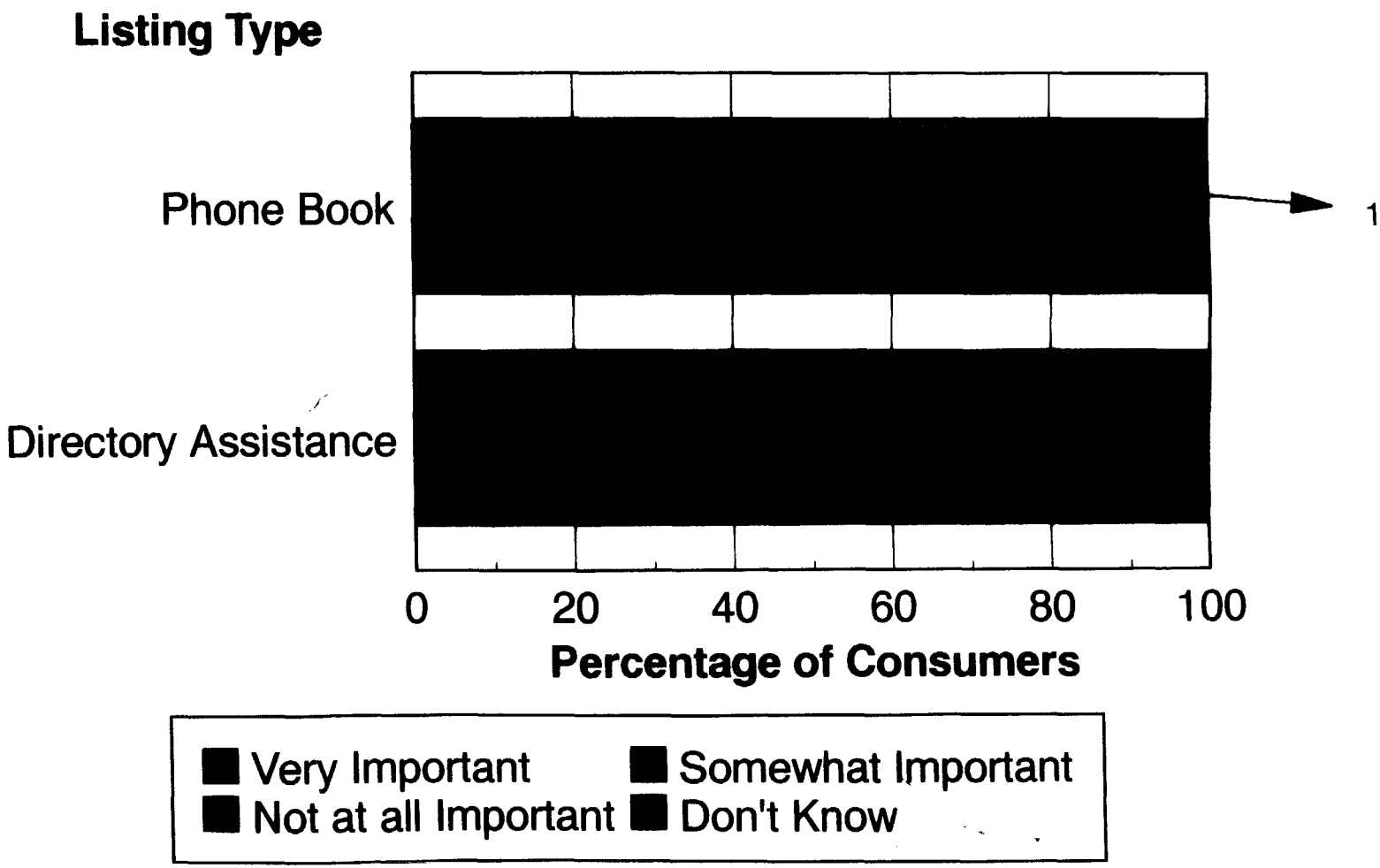

FIGURE 11

LIKELIHOOD OF SWITCHING LOCAL TELEPHONE SERVICE PROVIDERS WITH LOSS OF TELEPHONE NUMBER LISTING

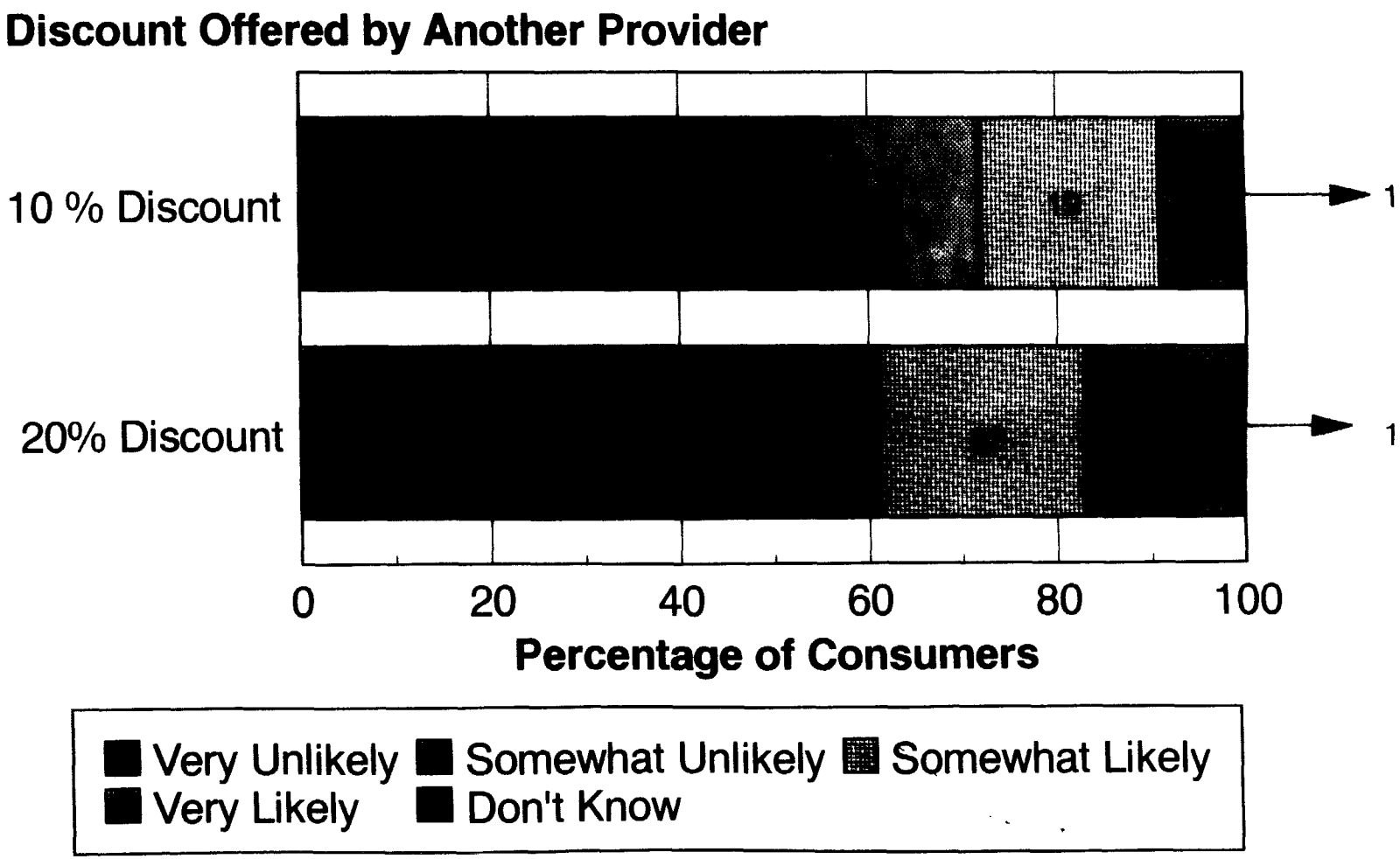

FIGURE 12

CONSUMERS MAKING TELEPHONE SERVICE CHANGES IN THE LAST YEAR

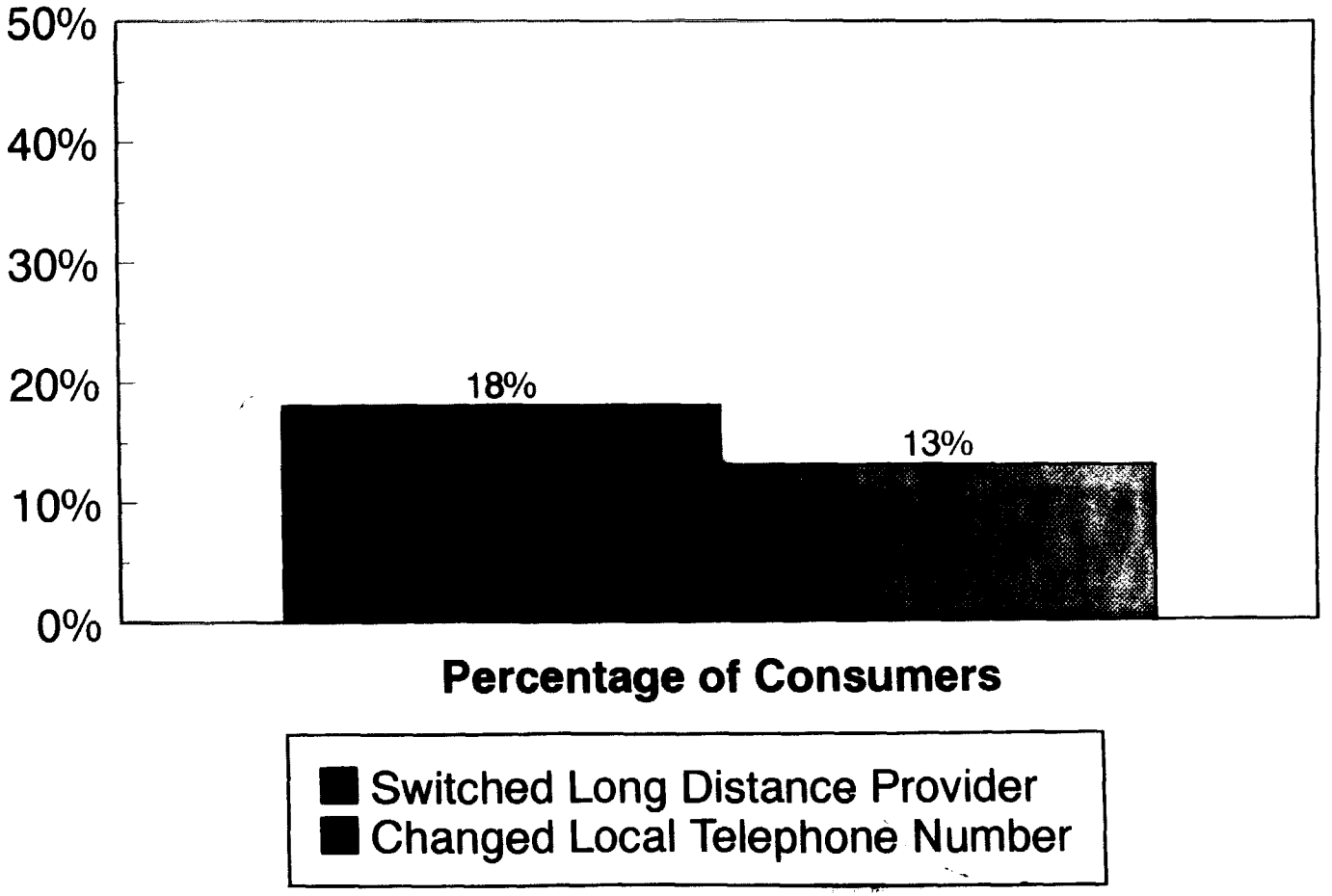

FIGURE 13

ATTACHMENT B

MCI COMMENTS

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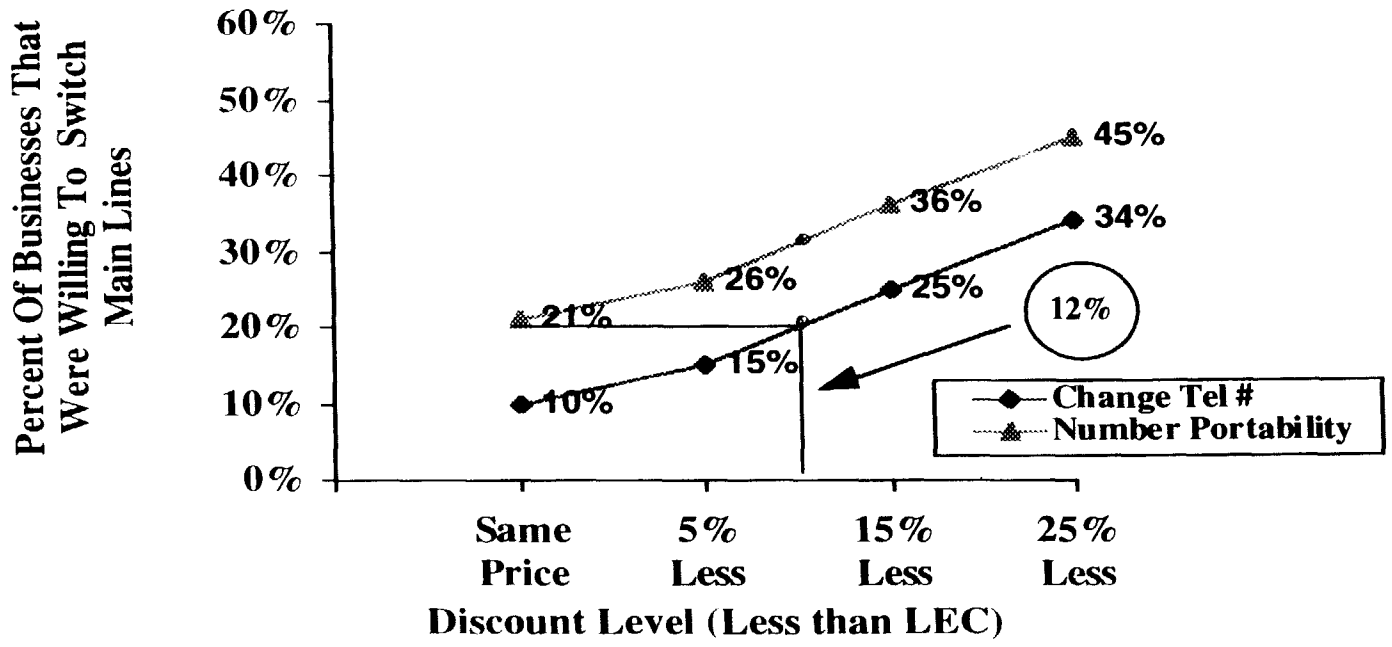
The relative value of a main line incumbent number is equivalent to a 12% discount on local and toll telephone service

PACIFIC BELL
A Pacific Telesis Company

Incumbent Long Distance Company

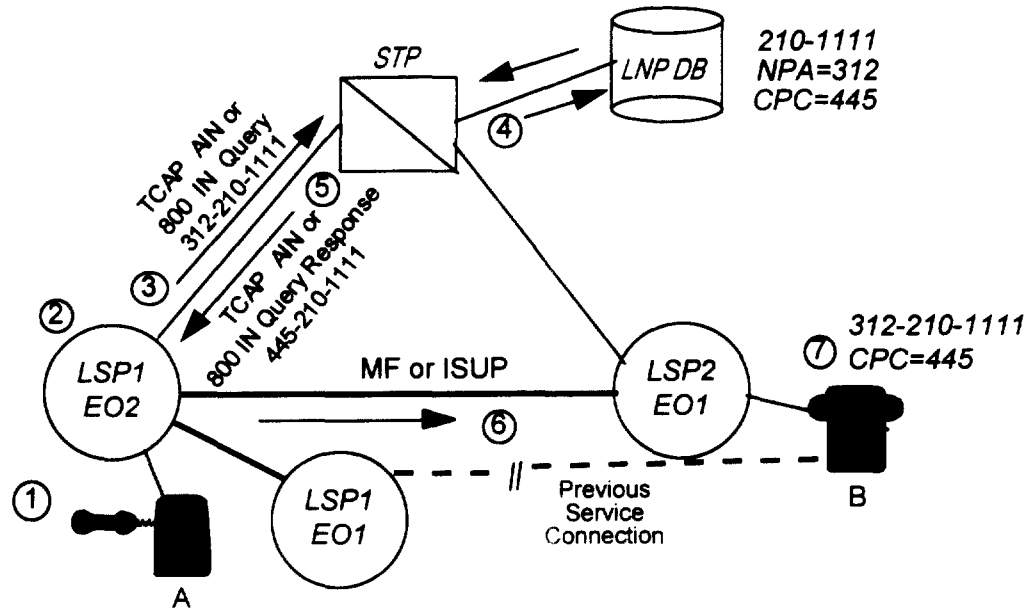
Trade-off Between Service Discount and Number Portability (Business)



ATTACHMENT C

MCI COMMENTS

CC DOCKET 95-116



Subscriber B, located in a portable NPA-NXX, changes from LSP1 to LSP2 without changing DN (312) 210-1111. The new routing flow for subscriber B is as follows:

1. Subscriber A calls Subscriber B using 210-1111.
2. LSP1 EO2 checks its internal database for presence of Subscriber B. If the DN is not found, a check for ported DN is required.
3. Call is retranslated; TCAP processing prefixes 312 NPA & launches query with 312-210-1111
4. SCP searches its database for 312-210-1111, finds entry with CPC of 445
5. SCP sends query response to LSP1 EO2 with 445-210-1111
6. LSP1 EO2 translates the call using the new digits (445-210-1111) and routes the call to LSP2 EO1
7. LSP2 EO1 completes the call to Subscriber B

LEGEND

AIN	Advanced Intelligent Network
DB	Database
DN	Directory Number
EO	End Office
CPC	Carrier Portability Code
IN	Intelligent Network
ISUP	ISDN User Part
LNP	Local Number Portability
LSP	Local Service Provider
MF	Multi-Frequency
NPA	Numbering Plan Area
STP	Signal Transfer Point
TCAP	Transaction Capabilities Application Part

Figure 1. Call flow for a subscriber who has changed local service providers

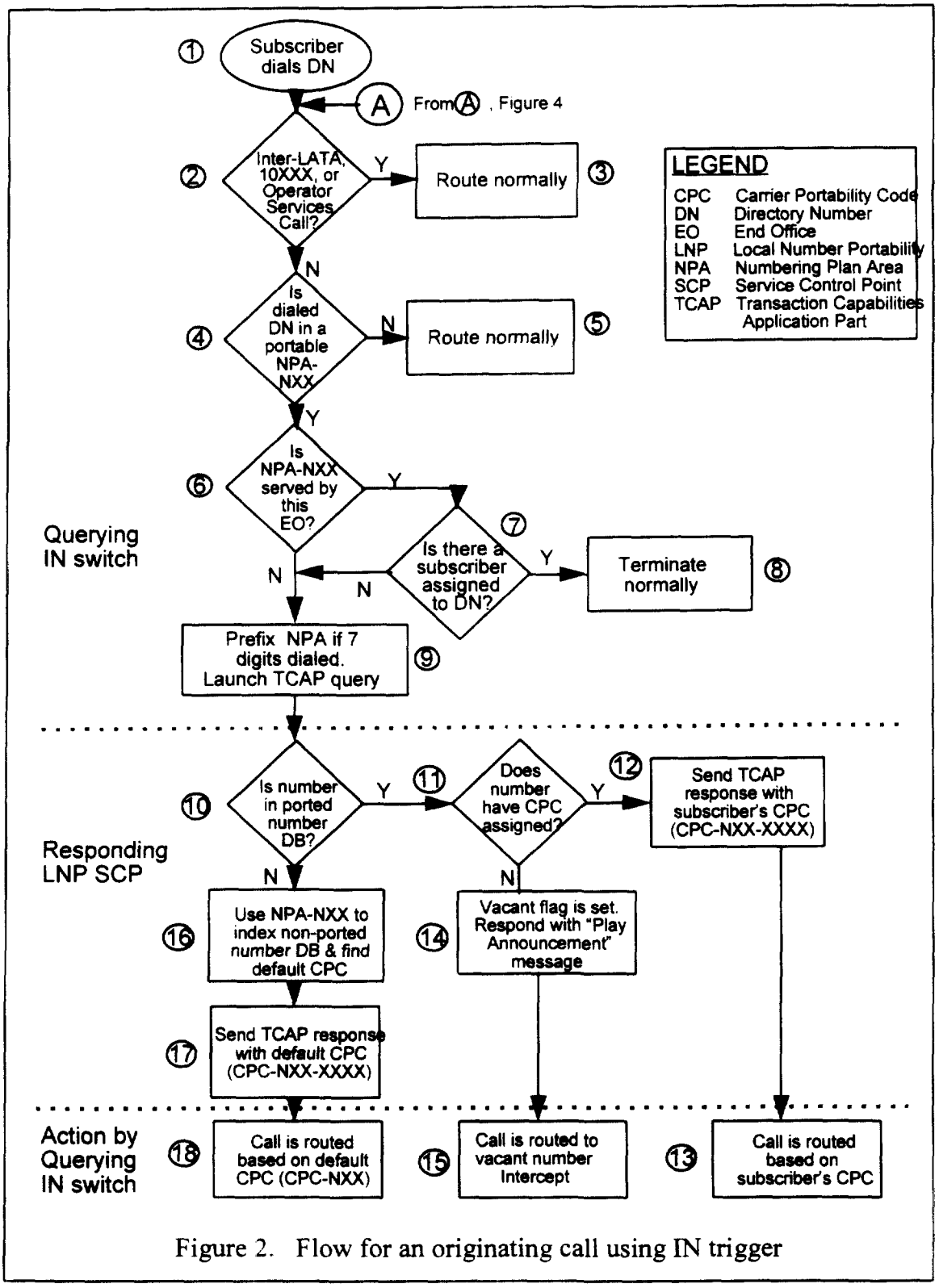


Figure 2. Flow for an originating call using IN trigger

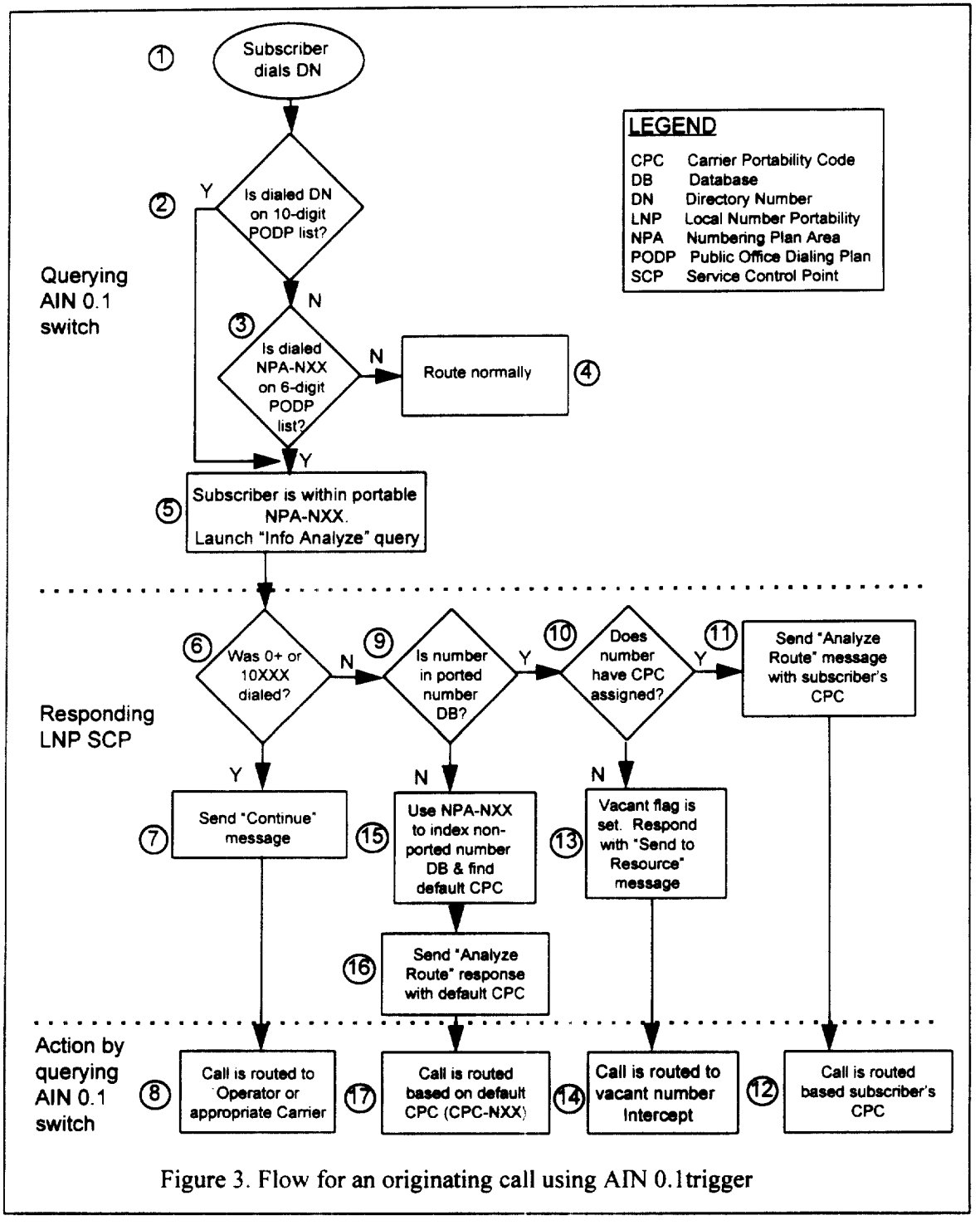


Figure 3. Flow for an originating call using AIN 0.1trigger

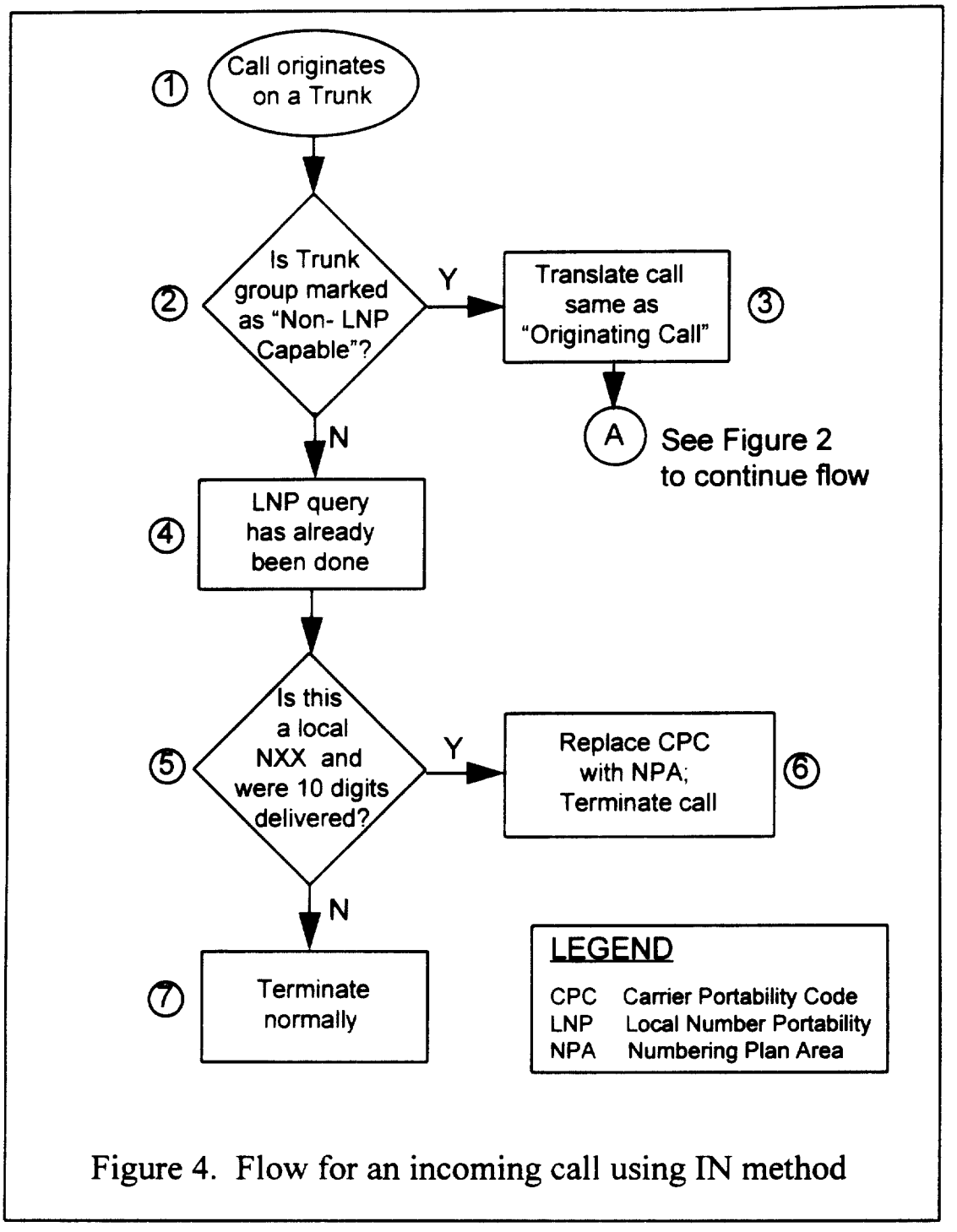


Figure 4. Flow for an incoming call using IN method

ATTACHMENT D

MCI COMMENTS

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LOCAL NUMBER PORTABILITY: AN OVERVIEW

By: Robert W. Traylor
September 5, 1995

SECTION 1. INTRODUCTION

The purpose of this document is to provide an overview of Local Number Portability (LNP). Specifically, this paper will explain LNP in the context of local competition and demonstrate why it is important to effective competition in the local exchange marketplace. The paper also describes how the interim proposals offered by the various incumbent service providers for providing LNP work, and how they are technically deficient in meeting the needs of competitors and incumbent service providers alike.

The paper then provides a conceptual explanation of how "True" LNP will operate and how it will mitigate, if not remove, the technical deficiencies of the interim proposals. The paper will then provide an explanation of the MCImetro multi-vendor team's Carrier Portability Code (CPC) solution which accomplishes the goals of the true LNP approach previously described. Attention is then turned to the activity in the various regulatory and industry bodies to explain what is occurring and what is expected to result from these activities. Several issues which are related to LNP are then described and discussed to a limited extent.

SECTION 2. WHAT IS LNP AND WHY IS IT IMPORTANT TO COMPETITION?

There is frequently some degree of confusion about what is meant by LNP. The Industry Numbering Committee (INC) addressed this early on to help everyone have a standard and common frame of reference when speaking about LNP. The INC agreed on three distinct types of Number Portability . This document uses this three definition approach.

The three categories of number portability are: service portability; geographic portability; and, most important to the competitive local service providers (CLSPs), provider portability. The definitions and a brief explanation of each is provided below.

The first type of number portability, Service Portability, allows an end user to change the type of service he receives from a service provider to another service from that same service provider, without changing his telephone number. The clearest example of this type of portability is the situation in which an end user currently has Plain Old Telephone Service (POTS) from a provider, but wishes to obtain ISDN service from the same provider without changing his telephone number. If the current serving switch does not support ISDN service, the customer would be forced to take a number change in moving to the ISDN capable switch to accomplish this objective.

The second type of portability, geographic portability, is also often referred to as location portability. Geographic

portability permits an end user to move from one permanent geographic location to another and retain his telephone number. An example of this is when an end user moves his business or residence from one side of town to the other and wishes to retain his telephone number.

Finally, Provider Portability is the type of LNP which is critical to the success of local competition and the CLSPs. This type of portability is defined as the ability to retain one's telephone number when changing providers. An example of this is when a customer of Illinois Bell wishes to have his local exchange service provided by MCImetro, and he wishes to retain his telephone number.

To determine the level of importance placed by customers on the ability to retain their telephone number when considering changing providers, MCI commissioned the Gallup organization to perform a national study. This study was to assess the current market conditions regarding the likelihood of businesses and consumers to switch local telephone providers if given the opportunity. Businesses and consumers were queried on their likelihood to switch service providers given various scenarios and the importance of several factors. Among the factors investigated was the impact of number changes related to changing providers.

A sample of over 2,000 businesses and 2,000 consumers was surveyed. This sample size provides a +/- 2.2% confidence interval at the 95% confidence level.

The results revealed a solid majority of business customers (83%) felt that retaining their telephone number when switching LSPs was very important, and only 5% reported that it was not important at all. In the case of consumers, over three quarters of those surveyed said number retention was very or somewhat important. The majority of consumers (80%) stated they would be very or somewhat unlikely to switch LSPs if they had to incur a number change.

It is obvious that provider portability is critical to the success of local competition due to its importance to all types of potential customers. Given this fact, what has been offered by the incumbents to provide this capability?

SECTION 3. INTERIM PROPOSALS FOR PROVIDING SERVICE PROVIDER PORTABILITY AND WHY THEY ARE INADEQUATE

The incumbent Local Exchange Carriers (LECs), primarily the RBOCs, have suggested several alternatives for accomplishing provider portability in the near-term. While the proposals have been packaged and labeled in several different ways, all such proposals are based upon two network capabilities that have been available in the network for some time and were designed and used for purposes other than provider portability. The two network capabilities that have been suggested are Remote Call Forwarding (RCF) and Direct Inward Dial (DID) trunking. Below is a brief explanation of how these two capabilities operate within today's network to provide service provider portability.

In the case of RCF, the following describes what occurs in the network to support provider portability:

An originating caller dials the number of a customer who has "ported" his number away from an incumbent's network (eg, Ameritech's network) to a CLSP's network (eg, MCImetro's network). With RCF, the call routes to the Ameritech switch where the Central Office Code, or NXX, is assigned. Upon reaching the Ameritech end office where the dialed NXX is assigned, the Ameritech switch determines that the number has been ported to the Metro network and uses the RCF capability to replace the original dialed number with a new seven digit number. This new seven digit number includes a central office code, or NXX, which has been assigned to the "ported to", or Metro switch that now serves the customer.

A technical analysis of the RCF proposal uncovered at least fourteen technical deficiencies and customer impacts. These deficiencies are a result of the fact that RCF was not designed to provide provider portability, but to provide a much different end user service. The areas of negative impact directly attributable to RCF are:

1. Call blocking
2. Call transmission degradation
3. Loss of CLASS features
4. Simultaneous call limitations to individual numbers
5. Dual number requirement accelerates exhaust of NANP numbers
6. Additional call setup time

7. Incumbent switch processing requirement
8. 911 record synchronization due to two number requirement
9. Customer complaint reconciliations due to two number requirement and two network involvement
10. Imposes uneconomic trunking requirements on the competitor
11. Access bill problems for IXCs
12. Operator services impacts
13. Potential for end user billing confusion if charged by the incumbent for RCF and by the CLSP for service
14. AMA recording equipment impacts.

In the case of DID, the following describes what occurs in the network to support provider portability:

An originating caller dials the number of a customer who has "ported" his number away from an incumbent's network (eg, Ameritech's network) to a CLSP's network (eg, MCImetro's network). With DID, the network delivers the call to the Ameritech end office which is assigned the dialed NXX, identical to the RCF approach. The Ameritech end office determines that the call is to be placed on the DID trunk group which is connected to the CLSP's appropriate switch. The number which is delivered to the CLSP's switch over this DID trunk group is the original dialed number.

A technical analysis of the DID approach, as with the RCF approach, reveals that many of the deficiencies and customer impacts inherent in the RCF approach persist with this approach as well. The deficiencies which apply to the DID approach are noted below:

1. Call blocking
2. Call transmission degradation
3. Loss of CLASS features
4. Additional call setup time
5. Customer complaint reconciliations due to two networks involved in calls
6. Imposes uneconomic trunking requirements on the competitor
7. Access bill problems on IXC calls
8. Operator services impacts
9. Potential for end user billing confusion if charged by the incumbent for RCF and by the CLSP for service
10. AMA recording equipment impacts
11. Synchronization issues associated with the initiation/termination of a customer's use of DID and its impact on both networks.

The basic cause for these deficiencies is not in the RCF or DID capabilities themselves, but in three specific facts:

1. The RCF and DID capabilities were designed to provide services and capabilities which were completely unrelated to provider portability. Therefore, it is no surprise that these capabilities have such deleterious impacts;
2. The RCF and DID approaches both require calls to route via the incumbent switch; and
3. In the case of the RCF approach, the use of two numbers.

Both RCF and DID function just as they were designed to. It is coincidence that they fail to meet the needs of the industry in providing provider portability.

Given the analysis of RCF and DID and recognizing what is required to support provider portability, the next logical question is "what ought a true LNP solution look like?"

SECTION 4. "TRUE" PORTABILITY: THE ESSENTIAL ELEMENTS

There are several essential elements to any acceptable form of true portability. Solutions which do not require calls to be processed via the incumbent network, or the network where the NXX code is assigned, prevents many of the problems associated with the interim proposals. In addition, any acceptable solution for providing LNP must do so in as transparent a manner as possible for the end user. This means that features and services the end user enjoys with his current service provider must be available from the CLSP to the extent the CLSP chooses to offer them. Therefore, the mechanism that is used to provide LNP must not prohibit the ability of the CLSP to offer the features and services it wants to offer.

Any appropriate True LNP approach should make maximum use of current technology and standards. This would serve to minimize the costs for all network providers that need to operate in an LNP environment.

Finally, any appropriate True LNP solution should minimize the need to perform database queries in order to effect portability of end user numbers.

One critical element which impacts all of the issues noted above is that of the basic architecture used in a True LNP approach. This includes both when and by whom database queries are required and performed. The industry has identified three basic architecture models. One model calls for database queries to be performed from the Originating Network in the processing of a call. A second model is one which calls for the Terminating Network, the network to which the dialed NXX is assigned, to perform the queries. The third and final model calls for the next to last network, or N-1 network, to perform queries. Each is discussed in the following paragraphs.

The Originating Network query model is the most objectionable approach for various reasons. This approach would require database queries for all calls, without exception. It would also require networks which may not otherwise be impacted by LNP to perform queries of the LNP database. For example, a call from St. Louis to Manhattan would require Southwestern Bell in Missouri to perform a database dip to determine which local service provider should deliver the call to the called party in New York. LNP may not even be mandated in Missouri, but Southwestern Bell would be expected to perform the database queries for the scenario described. In addition, significant protocol changes would be required for Southwestern Bell to communicate to subsequent networks in the call

processing path how to deliver the call at the distant end. There has been little, if any support for such an architecture in the industry.

The second approach, a Terminating Network query, is only marginally better than the Originating Network approach. In this scenario, calls are processed as they are today and delivered to the network where the NXX is assigned. This network then performs a database dip to determine if the call should be retained in the NXX assignees network, or if the call should be handed off to another local service provider's network. This approach is similar in concept to the RCF interim approach. Some of the deficiencies of RCF are mitigated by this approach, but unnecessary call processing occurs in the case of ported calls. This will impact network facility requirements as well as call setup times for ported calls. Moreover, the Terminating Network will be performing database queries on behalf of other networks, and will certainly feel the need to recover the associated costs from someone. At least in the near-term, the incumbent will be in a position of control over the CLSPs and the IXCs in this model.

The N-1, or next to last network model has the support of most CLSPs and IXCs as the most appropriate architecture discussed to-date. In this approach, for a local call the Originating Network performs the database query and routes the call based on the database response to the correct terminating network. For an interLATA call, the interexchange carrier performs the database query and routes the call based on the database response to the